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Editor - Captain F. W. Farrar, MC, USN

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Circular Letters:

NOTICE

A temporary shortage of white paper makes necessary the use of this color for this issue.

Retropubic Prostatectomy: With the increased life expectancy that has taken place during the past twenty years, many more men reach the age when prostatic enlargement is likely to occur. The treatment of the obstructing prostate, therefore, deserves increasing consideration.

Two years ago Millin of London described retropubic prostatectomy for the relief of prostatic obstruction. This operation is an extravesical procedure; it is applicable to all types of prostatic obstruction; it is relatively short and free of shock; the anatomic approach to the prostate is a reasonable one, because no important structures are endangered; the mortality is low; the postoperative course is benign (the postoperative stay in the hospital is seldom over two weeks); and all obstructing tissue is removed.

In a discussion of other recognized operations on the prostate Millin made the following criticisms:

Suprapubic operations. These have a mortality rate of from 6 to 10 percent and involve a long and uncomfortable convalescence. There is considerable blood loss during and after operation. Postoperative infection is likely. There is a high incidence of secondary hemorrhage.

Perineal operations. Technical difficulties require a long period of apprenticeship. The danger of urinary incontinence, damage to the rectum, and persistent fistulas is great. Nursing is difficult because of wound contamination from the rectum.

Transurethral operations. It is difficult to learn to do these operations efficiently. Considerable blood is lost when large glands are removed. Persistent postoperative infection is likely. There is a high incidence of urethral stricture. The operation results in incomplete removal of the gland and recurrent obstruction.

Believing that these operative procedures were far from satisfactory, Millin studied, on cadavers, this other approach to the prostate. He was convinced that the prostate should be removed by an extravesical approach. The retropubic operation as described by him is as follows:

In preoperative preparation the usual studies of renal and cardiovascular function are made, and intravenous pyelograms are obtained. The patient is not catheterized unless there is urinary infection that fails to respond to treatment or unless renal function is poor. Urethral-catheter drainage is avoided if possible. Low spinal anesthesia or pentothal sodium and nitrous oxide and oxygen are used. The patient is cystoscoped for the first time on the operating table. The bladder is exposed by a midline suprapubic incision, and the prevesical space is opened and cleared of fat. A specially devised self-retaining retractor separates the

rectus muscles and presses the bladder upward. The veins on the anterior and lateral aspects of the prostate are exposed and carefully studied, since their distribution varies considerably. These veins are situated in the prevesical layer of the pelvic fascia. A large central vein arises from the deep dorsal vein of the penis; other veins lie on each side. These veins are tied with the aid of a boomerang needle. The prostatic capsule is opened transversely, and bleeding points are grasped between toothed forceps. The incision is then carried down to the adenoma. The apex of the prostatic mass is freed from the capsule, and the dissection is continued up to the bladder neck. Here the prostate is freed by sharp dissection. Bleeding points are controlled by ligature or electrocoagulation. After removal of the hypertrophied gland a No. 18 catheter is passed through the urethra to the bladder. The prostatic capsule is closed with interrupted sutures. The abdominal wound is closed, a small drain being left in the prevesical space.

In his first 20 cases Millin reported no mortality and few postoperative complications. Since this first report Millin has performed over 400 retropubic prostatectomies, in which the mortality was approximately 4 percent. In his book describing the operation, Millin states that the extravesical retropubic approach to the prostate enables one to deal with all pathologic conditions within that organ and its contained urethra.

Since then, although little has appeared concerning this method of removing the prostate, the few reports available have been favorable. The recent French literature includes a description of retropubic prostatectomy with the reporting of 70 operations, in which the mortality was low (2 deaths), functional results were excellent, and the authors were enthusiastic about the operation. (New England J. Med., 26 Feb '48 - F. H. Colby)

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Silent Cancer of the Stomach: At the Boston City Hospital during the ten years from 1937 to 1947, 161 cases of cancer of the stomach were demonstrated at autopsy. These postmortem examinations constituted 4 percent of all autopsies performed during the decade and included about 14 percent of all those in which cancer of the stomach had been diagnosed clinically.

The findings of the pathologist confirmed as correct the ante-mortem clinical diagnosis of cancer of the stomach in 49 percent of the 161 cases in which the lesion was found at autopsy. In 46 (28 percent), cancer of the stomach had not been considered during life, and furthermore in an additional 36 (23 percent), although cancer had been thought of, a definite diagnosis of gastric cancer had not been made.

The average age at death, in these cases, was 62; the youngest was 25 and the oldest 93. Males outnumbered females by 3 to 1; and surgery was carried

out in 23 percent. In at least 8, in which inoperable tumors had been diagnosed, relatively small tumors in the pyloric or mid portion of the stomach were found.

No clinical history, or only a brief history of gastro-intestinal disturbances was given in 36 percent of the cases; yet in three quarters of them the cancer had spread. Localized lesions were found in only 16 percent of the cases. In 24, the cancer growth had extended and involved a large portion of the entire stomach, and of the remainder, the lesion was most commonly found in the pyloric or prepyloric area of the stomach.

Among the 161 cases, there were six in which the diagnosis of pernicious anemia had been made during life. Liver therapy had been given in five, in one of which the pathologist was not able to confirm the diagnosis of pernicious anemia. In these there had been a long history of abdominal disturbances; consequently it was not surprising to find metastatic spread of the cancer in four of the five cases. In only one of these five cases had exploratory laparotomy been carried out. In two of the six cases very small polypoid tumors were found in stomachs which showed marked gastric atrophy. Localized anaplastic changes and numerous mitotic cells were found in the polypi.

Among those in which surgery had been carried out, there were two in which a diagnosis of cancer of the pylorus had been made by the radiologist. Unfortunately, during the operation the surgeons had not been able to recognize the lesion and the cancer was not removed.

When a surgeon operates for cancer of the stomach which has been diagnosed by a competent radiologist or gastroscopist he should resect the affected area, even if he believes the lesion to be benign and even if he is unable to appreciate the presence of any lesion.

Anyone who has done gastro-intestinal fluoroscopies recognizes how much easier it is to feel a mass or to palpate a tender area when the patient is tilted into the horizontal position. Perhaps if all medical students were taught to examine and to palpate the abdomen, with the patient standing in a relaxed position against a wall while the student or physician sat in a chair facing the patient, then the number of tumors which would be palpated the first time the physician examined the patient might be increased, and perhaps a considerable number of lives might be saved each year.

At present, the chances for survival once cancerous changes have developed in the stomach depend in the main on three factors. These are: early and accurate diagnosis by the radiologist and gastroscopist, speedy administrative action to hurry the patient along to the operating table once a decision has been reached and, finally, radical removal of all diseased tissues by bold and skillful surgery. These technical skills are all of no avail if the examining physician does not suspect cancer of the stomach. (Rep. No. 34, 27 Jan '48, U. S. Army Medical Nutrition Lab., Chicago, Ill. - R. M. Kark)

The Cytologic Method as an Aid in the Diagnosis of Gastric Carcinoma: Carcinoma of the stomach is encountered more frequently than is any other malignant lesion today. Surgical extirpation has been the only effective means of treatment, but the disease is so insidious in its onset that extirpation is rarely possible.

Cancer of the stomach is usually moderately advanced before it produces any symptoms at all. If any significant increase in the rate of operability with expectation of cure is to be achieved, some means must be devised to detect the disease in its presymptomatic state. One such effort was reported in 1944 by St. John, Swenson, and Harvey. Using a technic of rapid fluoroscopic scanning of the stomach, they discovered three malignant gastric tumors in 2,413 persons over the age of 50. None had digestive symptoms of clinical note. Five other patients were explored and benign ulcers were found.

In this preliminary report, Ruth Graham et al. of the Massachusetts General Hospital gave their experience in the diagnosis of early gastric cancer by the cytologic examination of gastric fluid for the presence of malignant cells.

The cytologic method in the diagnosis of carcinoma was introduced by Papanicolaou in 1928. The method depends on the observation that most malignant growths desquamate cells which can be identified after suitable fixation and staining. The original report dealt with uterine carcinoma and has been confirmed by many investigators. It was an obvious step to apply the cytologic method to other body fluids. In 1937 Dudgeon and Wrigley reported 66-percent accuracy in the diagnosis of cancer of the lung by examination of the sputum. Wandall, in a series of 100 pulmonary carcinomas, found malignant cells in the sputum of 86 percent. Papanicolaou in 1945 mentions 9 patients in whom the gastric secretions obtained by aspiration were studied. Two had gastric carcinoma, and malignant cells were seen in the gastric fluid.

In the past year at the Vincent Memorial Laboratory specimens from gastric aspirations on 50 patients suspected of cancer of the stomach were studied by the cytologic technic. Gastric aspirations were used rather than gastric washings. It is of the utmost importance that the specimen be sent to the laboratory immediately, because if there is more than half an hour's delay the cells are digested and no distinct cellular characteristics can be identified. The specimen is centrifuged immediately, the sediment spread on a glass slide and placed at once in a fixative of equal parts ethyl ether and 95-percent alcohol. After fixation for at least 15 minutes, the slides are stained by Papanicolaou's method.

Most of the cells normally encountered in the gastric secretion originate in the squamous mucous membrane of the upper gastro-intestinal and pulmonary tract. These are large epithelial cells with a clear cytoplasm and a small, vesicular nucleus. Often epithelial cells from the gastric mucosa are seen. These appear as cuboidal or columnar cells with an eccentric nucleus

which is small and vesicular. Occasionally these columnar cells are flattened, and then they appear as great sheets of cells with nuclei of even size and single nucleoli. If the cells are well preserved, cellular borders are distinct. If the cell group has undergone some degeneration, the cytoplasmic outline may disappear, although the nuclei remain sharply defined. Erythrocytes, neutrophils, lymphocytes, and histiocytes are usually seen. Bacteria are common and cocci in groups of four are noted fairly frequently.

The malignant cells seen in gastric secretion often appear in groups. They have nuclei which are hyperchromatic and usually contain prominent nucleoli. There are no sharp cellular borders. Often the cytoplasm shows vacuolization, a characteristic of adenocarcinoma. There are occasional single cells which can be identified as malignant. They have large, hyperchromatic nuclei and an inadequate amount of cytoplasm.

In this series of 50 patients, 24 had carcinoma of the stomach, and of these, cancer cells were seen in the gastric fluid of 15. The error in the positive cases was 37.5 percent.

The 24 with cancer were explored. In 7 the lesions were resectable, and in 5 of these, malignant cells had previously been seen in the gastric secretion. One of the two failures in this small group concerned a scirrhous carcinoma of the wall of the stomach without ulceration of the mucosa.

In 26 patients no evidence of cancer was shown. Fourteen patients were explored; 12 were proved to have benign gastric ulcers; one had a neurofibroma of the stomach; and one, a benign duodenal ulcer. The cells in the gastric fluid were correctly diagnosed as negative in 25 instances. One positive cytological report was given for a patient later proved to have a benign gastric ulcer. The error in the cases without cancer was 3.8 percent.

Below are abstracted two cases which illustrate the value of the method:

P.R., M.G.H. No. 521265. This 50-year old man entered the hospital with the complaint of crampy, postprandial, midepigastric pain of 14 months' duration. He had obtained relief for the first 8 months on a liberal low fat, bland diet and antacid medication. The symptoms had then recurred. He had lost 5 pounds in weight over the course of a year but had noted no blood in his stools. Gastric analysis showed no free acid in the fasting specimen; there were 27.0 units in the first sample after histamine. Gastro-intestinal x-ray examination showed marked spasm of the antrum, probably due to a benign ulcer in the middle third of the lesser curvature. Cytologic examination of the gastric fluid was positive. A subtotal gastrectomy was performed. Pathological examination of the specimen showed a gastric ulcer with multiple foci of carcinoma <u>in situ</u>. Further sections revealed one area of invasive growth with penetration beneath the muscularis mucosa and involvement of nerve and nerve sheaths. The lymph nodes were negative.

H.S., M.G.H., No. 521291. This 67-year old man entered the hospital with the complaint of intermittent, severe, upper abdominal and substernal pain occurring from 1 to 2 hours after eating. He had not vomited and had noted no blood in his stools. He had lost 20 pounds in weight. Gastro-intestinal x-ray examination showed in the upper stomach an ulcerative lesion (2.5 by 1.5 cm.) which could be either malignant or benign. Cytologic examination of the gastric fluid was positive. A transthoracic total gastrectomy was performed. Pathological examination of the specimen showed a benign gastric ulcer. The lymph nodes were negative. These sections were reviewed and one area of preinvassive carcinoma was found at the periphery of the ulcer.

Although 9 of the 24 cases of carcinoma in this series were erroneously diagnosed as negative by cytologic examination, only 2 of the 7 resectable cases were missed and 2 extremely early cases were diagnosed correctly. The observation that preinvasive carcinoma sheds cells which can be recognized as malignant is of fundamental significance. The seemingly greater accuracy of the cytologic method in early lesions may be due to the presence of active, healthy, malignant cells on the surface of such lesions. In the advanced tumor with ulceration and necrosis, only occasional recognizable cells may be desquamated. Because the primary endeavor is to seek out the earlier cases, these facts emphasize the value of the cytologic method. (Surg., Gynec., and Obst., March '48)

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Carcinoma of the Bladder: The classification of epithelial tumors of the bladder has always been confusing, and no one classification of these neoplasms has been generally accepted. The Tumor Registry of the American Urological Association, after a study of over 1200 sections of these tumors in 1936, decided that it was not practical to segregate bladder neoplasms into definite groups corresponding to their cell types. Jewett and Blackman, after a histologic study of 97 cases of bladder tumor in which autopsy was performed, concluded that accurate classification of large infiltrating carcinomas of the bladder on the basis of cellular differentiation alone was impossible. Many classifications of these tumors in the past have been confusing because they were too complicated.

The present tendency is toward a simpler classification. In 1939 Ash stated that morphologically the tumors fall into two groups, papillary and sessile. For the past seven years epithelial tumors of the bladder at the Massachusetts General Hospital have been classified as papillary and non-papillary. Tumors in each of these groups are graded I, II, or III according to their microscopical appearance. Either the papillary tumors or the non-papillary (sessile) tumors may infiltrate. This simple classification is essentially the same as that used by the Bladder Tumor Registry, as outlined by Dart and Ash. It has the advantage of correlating the gross or cystoscopic appearance of these tumors with their histologic characteristics. Most bladder

tumors can be fairly accurately grouped and graded in this classification by cystoscopic examination alone. The term "papilloma" is omitted because a bladder papilloma is considered to be a papillary carcinoma (Grade I) even though it does not have the histologic characteristics of cancer. This is so because of its unpredictable behavior. Ash also avoids the term "papilloma," because he regards it as impossible to determine by histologic examination how such tumors would behave clinically.

A study of 107 postmortem cases of cancer of the bladder was made by Jewett and Strong to determine the relation of depth of penetration of the bladder wall to the incidence of (1) metastases, (2) lymphatic capillary invasion (incipient metastases), and (3) perivesical infiltration. The tumors were classified in three groups according to the following: (A) tumor cells confined to the submucosa; (B) tumor infiltration extended into but not through the muscularis; and (C) tumor cells extended through the muscular coat (perivesical infiltration). They then determined in each group the number of cases with regional or distant metastases, the number showing perivesical lymphatic or vascular invasion only, and the number with perivesical fixation of the mass. In each group the number of cases without these evidences of tumor spread gave them the percentage for potential curability as shown:

Group A	Group B	Group C
		
Submucosal infiltration	Muscular infiltration	Perivesical infiltration
No. of cases 3 Metastases 0 Perivesical lymph. only 0 Perivesical fixation only 0 Potentially curable 100%	No. of cases 15 Metastases 1 Perivesical lymph. only 1 Perivesical fixation only 0 Potentially curable 86.6 %	No. of cases 89 Metastases 52 Perivesical lymph. only 6 Perivesical fixation only 8 Potentially curable 26%

The most frequent sites of metastases are the regional lymph nodes, liver, lungs, and bones, particularly the vertebras and bony pelvis.

The treatment of cancer of the bladder is changing, with more tendency toward radical surgery (total cystectomy). Complete removal of the bladder constitutes serious surgery. The ureters must be transplanted to the skin or the large bowel. Skin ureterostomy is the safer procedure, but has obvious disadvantages. Evidence is accumulating that uretero-intestinal anastomosis may be compatible with comfort and relative security. This has been adequately proved for nonmalignant diseases of the bladder such as exstrophy, but less so for cancer. Improved surgical technic, adequate preparation of the large bowel, and the antibiotics have made uretero-intestinal anastomosis a safer procedure than heretofore, with a mortality rate of probably from 10 to 20 percent. Higgins recently reported no mortality from this operation in his last 22 cases.

The various methods employed in the treatment of bladder tumors are transurethral removal with or without radium, suprapubic operation with local destruction of the tumor or partial cystectomy, total cystectomy, and external radiation. Priestley discusses the application of these different procedures to vesical neoplasm and describes the indications for each. Small, noninfiltrating lesions of low malignancy are best suited to transurethral treatment. Segmental resection of the bladder is employed for tumors that are well removed from the ureteral orifices, situated high in the bladder on the dome or lateral walls and of reasonable size. This method is generally used for infiltrating growths. The indications for total cystectomy are extensive low-grade lesions that involve most of the bladder or are present in many areas and frequently recur, highly malignant infiltrating tumors not removable by other measures, and any neoplasm that cannot be removed completely without seriously affecting vesical function. External radiation is employed only in cases that are not suitable for surgery.

It is impossible at present to know how effective total cystectomy, as performed today, is, as a cure for cancer of the bladder. In the past this operation has been done without the aid of modern preoperative preparation, technic, and measures for controlling infection. Many patients whose tumors were so extensive that there was no reasonable hope of cure were formerly operated upon. As a result, the mortality was high, and complications were severe. Although total cystectomy involves a program of serious surgery, this procedure is becoming more simplified and standardized. It will doubtless be applied to more suitable cases with an eventual lowering of mortality. (New England J. Med., 26 Feb '48 - F. H. Colby)

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The Use of Serum Albumin in Cases of Cerebral Edema - Preliminary Report: The two most serious complications which follow the surgical treatment of intracranial tumors are postoperative hemorrhage and cerebral edema. They are very similar in their clinical manifestations and sometimes are difficult to distinguish. The manner in which cerebral edema develops remains obscure. It can seriously interfere with the ultimate recovery of a patient who may have undergone a technically successful operative procedure.

In cases of intracranial tumors in which cerebral edema is present before operation, the amount of edematous fluid frequently exceeds the total volume of the tumor. In cases in which ventriculography reveals marked ventricular displacement, operation frequently discloses only a small tumor. After the subtotal or total removal of tumors of the brain, the edematous reaction of the surrounding brain may raise the intracranial pressure above that which existed preoperatively.

In the treatment of cerebral edema, the fluid intake has been limited in order to produce generalized dehydration and hypertonic solutions have been administered intravenously to produce further dehydration of the cerebral

tissues. The administration of from a 5- to 50-percent solution of dextrose or a solution of sucrose, sorbitol, or one of the many other dehydrating agents has produced varying degrees of improvement. All too frequently, the resulting improvement is of short duration and is followed by the occurrence of compensatory edema. If dehydration is continued too long, it seriously interferes with normal water and electrolyte balance.

This preliminary report is based on a study of 31 cases in which a 25-percent solution of dry serum albumin was administered intravenously. In 30 of these cases, the serum albumin was administered after total or subtotal removal of an intracranial neoplasm; in the remaining case, it was administered to relieve cerebral edema which occurred after an injury of the head.

In 11 of the 31 cases, the results of administration of serum albumin could not be evaluated because other therapeutic procedures also were employed. The following analysis of the results will be based on the remaining 20 cases:

Definite improvement occurred immediately after administration of the serum albumin in 8 (40 percent) of the cases. In 4 (20 percent), the patients were improved, although the improvement did not occur immediately after the administration of the serum albumin. No improvement was observed in the remaining 8 cases (40 percent). There was no indication that the administration of serum albumin produced an untoward reaction in any of the cases. In those in which the best results were obtained, a total dose of from 60 to 80 c.c. of the solution of serum albumin was administered in a period of from 8 to 10 minutes, and the patients were not permitted to take any fluids for the next 8 hours.

Serum albumin should be considered for use after operation in cases of intracranial tumor in which the presence of cerebral edema is suspected and to prevent cerebral edema in cases of injury of the head. (Proc. Staff Meet., Mayo Clin., 18 Feb '48 - E. M. Gates and W. McK. Craig)

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Use and Procurement of Rocky Mountain Spotted Fever Vaccine: It is recommended that the term, "Tick Fever Vaccine," not be used. Although "Tick Fever" is occasionally used as a synonym for Rocky Mountain spotted fever, it should not be so used because "Tick Fever" may be defined as any infectious disease transmitted by ticks, and the causative parasite so transmitted may be a rickettsia as in Rocky Mountain spotted fever, a bacterium as in tularemia, a virus as in Colorado tick fever, a spirochete as in relapsing fever, or a piroplasma as in Texas tick fever.

Geographical names have occasionally been given to diseases because it was thought at first that those diseases were sharply limited to circumscribed areas. Such was the case with Rocky Mountain spotted fever which, since its original designation, has been reported from nearly every state in this country.

Although the mortality rate varies from region to region, no distinction should be made between the disease as it occurs in different areas. Therefore, in requesting vaccine no further designation other than Rocky Mountain spotted fever vaccine is necessary or desirable.

The seasonal incidence of Rocky Mountain spotted fever corresponds to the seasons in which the ticks are active.

The list of vectors, proved and potential, of Rocky Mountain spotted fever includes at least ten (10) species of ticks distributed in four genera.

Ticks appear in the spring, become numerous late in May or early in June, remain prevalent through July, and rapidly disappear in August. Their favorite resting places are long grasses and underbrush, particularly along trails and streams. In the northwestern region of the United States, Dermacentor andersoni is the most prevalent from the middle of March to the middle of June; therefore, the disease in that region occurs from March to July. In the east, Dermacentor variabilis is most abundant from May to July with the highest incidence of disease occurring in June and July.

Chief reliance for protection of individuals should be placed upon the complete avoidance of ticks, but where this cannot be accomplished there should be a careful search of the body at least twice daily to allow a prompt removal of any found. It is desirable to remove ticks from the body of man (or animal) with tweezers or forceps rather than with the fingers. The tick is readily removed by pulling gently on its head end. Care should be exercised to avoid crushing its body. After removal, ticks can be destroyed by burning or dropping into a disinfectant. The site of attachment, hands, and instrument should be disinfected after handling ticks. The attachment of an infected tick for from 4 to 6 hours is probably necessary for transmission of the infection. Vaccination does not prevent development of the disease in all cases, but in those in which the disease does occur after vaccination, its severity is usually diminished.

It is not the policy of the Bureau of Medicine and Surgery to employ mass vaccination against Rocky Mountain spotted fever, but authority will be given for its use for individuals and groups of persons who, because of the nature of their duty, must spend considerable time in regions of the United States where there is great danger of acquiring Rocky Mountain spotted fever.

All requests for Rocky Mountain spotted fever vaccine should be addressed to the Preventive Medicine Division of the Bureau of Medicine and Surgery, where the request will be reviewed and passed on to the Materiel Division. (Preventive Med. Div., BuMed)

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Study of Vaccination Against Influenza: The effect of vaccination with the influenza A and B vaccine on the incidence of respiratory diseases in a group of industrial workers during the 1947 epidemic was reported by 13 companies located in various regions of the United States. The data from 6 companies showed a lower rate of respiratory diseases or influenza in the vaccinated group as compared with the nonvaccinated group, whereas the rates from 7 companies were higher or not significantly different in the two groups. Although the lower rates of respiratory illness in the vaccinated groups of some companies suggested a beneficial effect of the vaccine, analysis of the records by months, and subdivisions of these companies indicated that other factors were probably responsible for these differences. This view is supported by the opposite results reported by some companies in this survey, by a consideration of these data in relation to the general characteristics of the 1947 epidemic, and by the negative results of other studies made during this period.

Although the data presented in this paper, in general, did not show a consistent reduction in sickness during the 1947 influenza epidemic as a result of vaccination, this does not imply that influenza vaccination will be of no value to industry in future epidemics. The lack of effectiveness of the vaccine may have been due to certain characteristics of this particular epidemic since it proved very effective during the 1943-44 and the 1945 epidemics. As additional information concerning the various strains of the influenza A virus becomes known, and the technological problems associated with the preparation of the vaccine are clarified, the effectiveness of the vaccine in different epidemics should increase. Therefore, the industrial studies reported here should be considered only as preliminary in character. (Special Report dated February 1948 to Members of Industrial Hygiene Foundation, of Study by Anna Baetjer of Johns Hopkins University School of Hygiene and Public Health)

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Studies Concerning Respiration: The following is from material contained in a progress report made to the U. S. Army by the Harvard School of Public Health on a contract to carry out fundamental studies to further the development of technics useful in the administration of oxygen under normal pressure, and, as developments permit, increased pressure.

Investigation of the roles of hypoxia and respiratory tract obstruction in producing pulmonary edema resulted in conclusions that

(a) obstruction to both phases of respiration is relatively benign in its effects on the lung;
(b) inspiratory negative pressure of 15-cm. water for six hours causes congestion but no edema;
(c) breathing 9-percent oxygen for 6 hours, even in combination with obstruction, does not produce lung edema; and

(d) pulmonary arterial pressure changes during obstructed breathing are not conducive to increased capillary filtration.

The rate of resaturation of arterial blood after periods of hypoxia provides a crude test of the diffusion barrier in the lung. In man the oximeter makes this test of some clinical usefulness.

Chemical and other injuries of the lung may result in a syndrome of pulmonary vascular disease, characterized chiefly by pulmonary arterial hypertension, fixed cardiac output, and moderate defect in lung function. (Report dated Dec. '47, Contract W-49-057-CWS-46)

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The Significance of "Tics" as Possible Manifestations of Epilepsy: In describing the numerous manifestations of epilepsy, recent textbooks of neurology discuss a great variety of motor phenomena but do not include the so-called "tics" as possible manifestations of epileptic disorder. During the past two years the author has observed 3 cases of tic in which, with the aid of electroencephalographic study, a diagnosis of epilepsy was made and in which, on the basis of all the evidence available, it appeared that the tics were true manifestations of epilepsy and not unrelated findings.

In all 3 cases the electroencephalograms showed dysrhythmias of the epileptic type. In one case the electroencephalogram revealed classic bursts of 3-per-second spike and wave activity, diagnostic for the petit-mal epilepsies. In another case bursts of 3-per-second waves with small spikes occurred; although not classic, this tracing was also considered characteristic for petit-mal epilepsy. In the third case, although the dysrhythmia was of the high-voltage, slow-wave, 3-per-second variety, the absence of spikes made the tracing only suggestive of petit-mal dysrhythmia. However, when all three electroencephalograms were viewed together, the impression was obtained that they represented similar dysfunctions. In each case a diagnosis of idiopathic epilepsy was made.

It is the author's opinion that these 3 cases represent atypical forms of myoclonic epilepsy. In favor of this opinion is the electroencephalographic finding of 3-per-second spike and wave dysrhythmia, which, according to Lennox, is characteristic of myoclonic epilepsy as well as of petit-mal and akinetic epilepsy. Tics have a resemblance to myoclonic jerks, and although in the usual forms of myoclonic epilepsy brief contractions of muscles in the upper extremities occur, at times similar contractions of other muscles are seen.

Tics are usually considered to be manifestations of neurotic disorders. Therefore, the possibility should be considered that the tics in these cases were of psychogenic etiology and that their occurrence in patients with epileptic dysrhythmia was merely a coincidence. This possibility cannot be entirely excluded with the limited evidence available. However, it appears to be more

likely that the tics described were true manifestations of epilepsy, not only in view of their resemblance to myoclonic phenomena and the rather characteristic electroencephalographic findings, but also because of a pronounced response to relatively small doses of anticonvulsant medication without the appearance of drowsiness or other side effects.

Wechsler states that, although most observers have assumed tics to be psychogenic, the fact that they occur at times on the basis of brain damage - for example, as a sequel to epidemic encephalitis - should lead one to question routine psychogenic explanations of their origin. He states that the precipitation or aggravation of tics by emotional factors does not argue in favor of a completely psychogenic explanation because many definitely "organic" movements are similarly affected by emotional fluctuations.

In view of these considerations it appears reasonable that more patients with tics should be studied electroencephalographically to clarify the question of whether there is an underlying dysrhythmia as found in epilepsy. Although it is expected that few such patients will be found to have epilepsy, this diagnosis should be kept in mind when the problem of tic arises. (New England J. Med., 26 Feb '48 - S. Levin)

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Scarlet Fever in the Navy: When the strength of the Navy is increasing, a problem is presented by the incidence of certain diseases which occur particularly among the younger recruits. One of these diseases is scarlet fever. From a pre-war low of 0.1 per 1,000 strength in 1939 and 1940 the incidence rate for scarlet fever rose to a high of 7.4 in 1945. All of the data on incidence are based upon tabulations from the Fa card (Individual Statistical Report of Patient), on deaths, from the Form N (Certificate of Death), and on invalidings from the Service, from the Form M (Report of Medical Survey). The incidence includes those cases taken up as A (New Admissions), ACD (Admitted Contributory Disability), AD (Additional Diagnosis), and EC (Diagnosis Established or Corrected).

During the 10-year period from 1936 through 1945 there were 60,133 cases of scarlet fever reported. The majority of these occurred during the war years when the strength of the Navy was at its peak and when there were large numbers of recruits in the Service. Of these 60,133 cases, 59,460,or 98.8 percent, occurred during the period from 1942 through 1945. That this disease is most prevalent at training centers is brought out by an examination of the preliminary data for 1946 which indicates that of the 7,004 cases of scarlet fever reported in the Navy and Marine Corps, almost 60 percent occurred at three Naval training centers: NTC, Bainbridge, Md., NTC, Great Lakes, Ill., and NTC, San Diego, Cal.

The number of sick days per case for the entire 10-year period averaged 22.5. The range in the average number of sick days per case, however, was

from a minimum of 21.2 in 1943 to a maximum of 33.9 in 1939. The average number of sick days per case was lower in the last six years of the period than in the first four, possibly indicating the effects of the introduction of sulfonamides in the treatment of scarlet fever.

The deaths from scarlet fever in the 10-year period numbered 69, or an average fatality rate of 0.1 per 100 cases. There were 33 invalidings from the Service, 31 of which occurred in the years from 1941 through 1945.

Of the total of 59,460 cases reported during the war years, 95.7 percent of the cases occurred in the continental United States, 1.5 percent in non-continental areas, and 2.8 on ships.

The monthly incidence rates for scarlet fever charted for the years 1942 through 1945 demonstrated a seasonal pattern for this disease with the increase in incidence in the late winter and early spring. (Statistics of Navy Medicine, March '48)

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Acute Gastro-Enteritis in the Navy: For many years diseases of the digestive system (Class III) have ranked high among the diagnostic classes as a cause of morbidity and sick days in the Navy and Marine Corps. The leading cause of morbidity within Class III, for the period 1936 through 1945, was acute gastro-enteritis, which also ranked high among all diagnoses as a cause of morbidity.

All of the data for this report are based upon the Fa card (Individual Statistical Report of Patient), and it should be pointed out that the diagnosis, acute gastro-enteritis, does not include any of the enteric disturbances diagnosed as food infection, food intoxication, bacterial food poisoning or allergy, nor any of the dysenteries, i.e., bacillary, balantidic, amebic, or unclassified.

The percentage of the incidence of Class III diseases due to acute gastro-enteritis increased from 22.7 percent in 1936 to 32.6 percent in 1945.

For the ten years combined there were 135,032 cases of acute gastro-enteritis occurring in the Navy and Marine Corps, with an average annual rate of 12.2 per 1,000 average strength. It should be pointed out that these figures indicate a somewhat lower level of incidence than was actually experienced, because numerous cases of acute gastro-enteritis are of so mild a nature that the patient is not kept on the sick list for more than a day, and consequently the case is not reported.

Slightly higher rates are reported for gastro-enteritis during the war years and reflect the change from a peacetime to a war status and the concurrent changes in sanitation and living conditions. However, these rates are low for a war period and reflect the effort expended by the Medical Department to

prevent insanitary conditions from occurring. Preliminary data for 1946 indicate a decrease in the incidence rate for gastro-enteritis which is to be expected with the return to a peacetime basis.

Although the incidence rates for gastro-enteritis were about 25 percent higher during the war years than in the first half of the 10-year period, the average number of sick days per case decreased slightly during the war years, varying between the minimum of 4.4 sick days in 1945 and the maximum of 5.9 reported in 1937.

The majority, 98.7 percent, of the patients with acute gastro-enteritis were returned to duty. The few reported sequelae were mainly chronic gastro-enteritis and chronic colitis.

A seasonal trend is noticeable for acute gastro-enteritis. In depicting monthly incidence rates for the years 1942 through 1945 it was shown that the rates increased with the advent of warm weather and reached their peak in the late summer months. (Statistics of Navy Medicine, March '48)

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Incidence of Venereal Diseases in the Navy: This report is based on data taken from tabulations of the Monthly Morbidity Report (NavMed 582). During the war years there was a great decline in the incidence rate for venereal disease in the Navy and Marine Corps. From 88.5 per 1,000 in 1940, for example, the incidence rate for venereal diseases dropped to a low of 30.8 in 1944. In the period immediately following the cessation of hostilities, however, the incidence rates for this group of diseases increased considerably over the previous wartime lows.

This rise was apparent in all areas; the rates from noncontinental areas and ships, however, increased considerably more than those reported from continental stations. From a low in July 1945 of 35.7 per 1,000 strength for all venereal diseases, the combined incidence rate for all ships and stations rose to a high in October 1946 of 109.6. In the continental United States the rates increased from 51.9 in July 1945 to 73.5 in October 1946; and for these same months the increases in the incidence rates reported from noncontinental areas and from ships were from 16.3 to 139.9 and from 27.3 to 164.2 respectively.

From October 1946 until November 1947 (the time of the study) there was a gradual decrease in the incidence rates for all venereal diseases to 72.7 per 1,000 strength, which was the lowest subsequent to February 1946. To what extent this downward trend in the incidence of venereal diseases in the Navy and Marine Corps may reflect more effective control measures is not shown by the data at hand.

In continental Naval districts the November 1947 rate of 52.1 closely approximated the low rate observed in July 1945. In noncontinental areas the

downward trend was even greater, with the November 1947 rate of 50.3 being the lowest reported subsequent to December 1945. The highest venereal disease incidence rates in November 1947 were reported from ships, with the rate for all ships being 119.1, more than twice that of either continental Naval stations, or noncontinental shore bases. Nevertheless, this rate represented a substantial decrease from incidence rates reported in late 1946 and early 1947. In the period immediately preceding and immediately following the cessation of hostilities, the incidence rates for venereal diseases reported from ships were next to the lowest. The rate, however, increased rapidly all during 1946. The highest rate of 173.2 per 1,000 was reached in November 1946. (Statistics of Navy Medicine, March '48)

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The Effect of Tetraethylammonium Chloride on Blood Pressure Before and After Sympathectomy for Hypertension: Tetraethylammonium chloride is a quaternary ammonium compound with a structural formula rather closely related to that of acetylcholine. It has been found to be effective in blocking the transmission of impulses across the ganglia of the autonomic nervous system. The site of this block has been found to be between the preganglionic and the postganglionic fibers of the autonomic nervous system. The mechanism by means of which tetraethylammonium chloride prevents the response of acetylcholine has been thought by Moe to be a competitive inhibition of the acetylcholine present in the ganglia.

The clinical effects of this drug have consisted of a decrease in the blood pressure of hypertensive patients in the recumbent position (blood pressure of normal persons in the recumbent position was not significantly altered), orthostatic hypotension, tachycardia, ptosis and mydriasis, increase in the cutaneous temperature of the fingers and toes, and decrease in gastric acidity and gastrointestinal motility.

In the course of observations, the authors found that tetraethylammonium chloride would greatly reduce the blood pressure of hypertensive patients in the recumbent position after sympathectomy, whereas the blood pressure may or may not have been reduced prior to sympathectomy. From a half to a third of the amount that had been given intravenously before sympathectomy was found to produce from a two to threefold effect when it was administered intravenously after sympathectomy, and the duration of the decreased blood pressure was greatly prolonged.

Nine patients with essential hypertension were observed in this study. Tetraethylammonium was injected intravenously into six of them prior to operation, and into all nine from 2 weeks to 4 years after they had undergone extensive transdiaphragmatic sympathectomy or an infradiaphragmatic type

of sympathectomy. By means of this drug the blood pressure of only one out of six was reduced to normal prior to operation; however, the blood pressure of 8 of the 9 patients was temporarily reduced to normal (140 mm. of mercury systolic and 90 mm. of mercury diastolic or less) after operation.

The average duration of the reduction of the blood pressure of the six patients before sympathectomy was eleven minutes; the average dose used to cause this duration of response was 450 mg. After sympathectomy, the average duration of response was 27 minutes; the average dose of the drug was 200 mg. The high blood pressure of one patient who had undergone an infradiaphragmatic type of sympathectomy 4 years previously was found to be lowered to normal for a period of 60 minutes when 200 mg. of the drug was administered intravenously. This was the longest duration of reduction of the blood pressure that was noted. The time elapsed after sympathectomy may or may not have been of importance. The blood pressure of one patient actually increased after the injection, which was carried out two weeks after sympathectomy. This patient was not characteristic of those in the whole group studied, in that extensive sympathectomy and nephrectomy had been performed.

The failure of reduction of blood pressure as a result of sympathectomy is thought not to be due to organic changes in the arterioles. At least, the blood pressure can be reduced to normal by the intravenous injection of tetraethylammonium chloride after sympathectomy which itself has not caused significant reduction in blood pressure, and in spite of failure of the drug to effect great reduction of blood pressure prior to sympathectomy. Moreover, after sympathectomy the effect of tetraethylammonium chloride on blood pressure is more prolonged and is produced by smaller amounts than before sympathectomy.

Two explanations of these results are apparent: (1) the arterioles may be more susceptible to the effect of the drug, in some way as yet unknown, or (2) the remaining ganglia (those not removed by the operation) may be more completely blocked by the drug after sympathectomy than before sympathectomy.

It appears, on clinical grounds, that there may be an important clue to the genesis and treatment of hypertension in these observations. (Proc. Staff Meet., Mayo Clin., 18 Feb '48 - H. S. Brown et al.)

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Acute Vitamin-C Deficiency and Periodontal Disease: In a study reported in the Journal of Dental Research for February 1948 by I. Glickman, working at the Tuft's College Dental School of Boston, twenty-five young adult guinea pigs were used over a period of 35 days in order to observe how changes in the gingivae and supporting tissues induced by vitamin-C deficiencies are related to periodontal disease. Sixteen were placed on a diet free of vitamin C; nine, used as controls, were given the same diet supplemented by ascorbic acid. Microscopic examination indicated the following:

Gingival inflammation was not a prominent finding in either the vitamin-C-deficient or control animals, and when it occurred in either group of animals, it was of slight severity and associated with food remnants and debris in the gingival sulcus.

Pocket formation was found in both groups where the area was not protected by contact with the approximating tooth. This suggests that pocket formation is not associated with acute vitamin-C deficiency and that pockets observed in both groups were formed by food impaction. It appears, however, that when pocket formation does occur in animals with vitamin-C deficiency as the result of a local factor, the pocket is of a greater depth. The greater depth is due to degenerative changes in the periodontal membrane as the result of vitamin-C deficiency which facilitates migration of the epithelial attachment along the cementum. Edema, hemorrhage, and collagen degeneration were observed in the periodontal membrane of the animals deficient in vitamin C.

In general, alveolar bone in vitamin-C-deficient animals was osteoporotic, with little evidence of osteoblastic activity. Although the destruction of supporting tissues is striking in acute vitamin-C deficiency, it is not to be inferred that in all instances of periodontoclasia a deficiency of vitamin C is the causative factor. (U. S. Nav. Dent. School, Bethesda, Md.)

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The Significance of Giant Follicular Lymphadenopathy: The condition known as a giant follicular lymphadenopathy and associated with the names of Brill and Symmers, is a disease of the lymph nodes which has attracted increasing attention during the past few years. This disease, though not uncommon, is not well known and often is not correctly interpreted by pathologists; it offers many challenging aspects to the internist, the surgeon, the hematologist, the pathologist, and the radiotherapist. As described clinically and histologically by Brill, Baehr, and Rosenthal in 1925, giant follicular lymphadenopathy is a well defined disease entity which may eventually be followed by or transformed into lymphatic leukemia, polymorphous-cell sarcoma, or Hodgkin's disease. Symmers created the term "giant follicular lymphadenopathy" when he published his observations in 1927.

At the Tumor Clinic of Michael Reese Hospital, Chicago, Ill., the author and associates, after familiarizing themselves with the clinical and histological findings, were able, within a period of six months, to establish the diagnosis of giant follicular lymphadenopathy in 9 patients who previously had been under observation or treatment for diagnoses such as "atypical sarcoma," "atypical Hodgkin's disease," or "aleukemic leukemia."

The disease bears a strong resemblance to Hodgkin's disease and in most instances is diagnosed as such. Giant follicular lymphadenopathy is characterized by either localized or generalized enlargement of the superficial lymph

nodes, often in conjunction with splenomegaly. The first enlargement seems frequently to be in the lymph nodes of the neck, but there is no preference for any particular site. Lymph node swelling may occur in the supraclavicular fossa, in the axilla, in the groin, or in the abdomen, or may be generalized, involving practically all palpable lymph nodes of the body. The involved nodes are usually rather soft; only very seldom do they become hard. Their size may vary from a chain of small lymph nodes to masses as large as a grapefruit, without any regularity. The lymph nodes may remain unchanged in size or configuration for months or even years, but in other instances the occurrence of a single lymph node is quickly followed by generalized lymphadenopathy. The general condition of the patient is usually not influenced to any extent by the lymphadenopathy, even if generalized. Enlargement of the spleen is a rather common feature of the disease. Pain is practically never present, and there are no characteristic alterations in the peripheral blood.

Although there is no age limit for giant follicular lymphadenopathy, those in the third and fourth decades seem to be afflicted more frequently than younger or older persons. There is no definite sex preference.

The microscopic findings in the lymph nodes are rather characteristic and should not be mistaken for leukemia, sarcoma, or Hodgkin's disease. In most instances the anatomic structure of the lymph follicles is changed, but not completely destroyed, and for this reason most pathologists, if they are not thoroughly acquainted with the characteristics of this disease, are hesitant to make a diagnosis of a malignant lesion. Chronic lymphadenitis and lymphoid hyperplasia are the most frequent terms used by pathologists to describe the microscopic findings. The histologic changes are comparatively simple, and consist, as Symmers has aptly stated, of numerical and dimensional hyperplasia of the lymph follicles. Frequently, these follicles are difficult to distinguish from the familiar hyperplasia which occurs with innumerable inflammatory conditions, and not uncommonly also with benign and malignant neoplasms. Often the follicles are filled with large hypochromatic or even achromatic nuclei, also called "shadow cells," of various shapes. In some instances the peripheral zone of small lymphocytes is absent, and in others the follicles may be made up exclusively of small lymphocytes. As long as these cells remain localized within the lymph follicles, the disease must be diagnosed as giant follicular lymphadenopathy, but rupture of the follicles with escape of the cells into the surrounding tissues of the lymph node is usually considered to be pathognomonic of polymorphous-cell sarcoma.

It seems that the microscopic picture, as described, may exist for a number of years, simulating a benign lesion from the point of view of the pathologist. At the clinic patients have been seen who have repeatedly undergone biopsies of enlarged lymph nodes over a period of as long as five years, still showing the same microscopic findings. Although Symmers believes that a spontaneous diminution in the size of the nodes, or a complete disappearance, may occur, the author and associates have not noticed such spontaneous disappearance in the patients under their observation. There is no way of determining from the study of the microscopic slides whether the lymph nodes will remain for a short

or long time in the same state, or later show changes which must be interpreted either as sarcoma, leukemia, or Hodgkin's disease.

Since 1941, 22 patients in whom the diagnosis of giant follicular lymphadenopathy could be established have been observed at the Tumor Clinic. In some of these cases the diagnosis was missed when the patients were first seen and corrected only after periodic follow-up examinations when suspicions were sufficiently aroused to review the microscopic slides of earlier biopsies. It is probable that a number of other cases which were considered to be chronic lymphadenitis should have been classified as giant follicular lymphadenopathy, and that the incidence of the disease is higher than the clinic records indicate.

Of the 22 patients in this group, 12 were males and 10 females. Their ages varied from 16 to 67 years, the average being 39 years. In some instances the symptoms of which the patients complained had been existant for only a short time; the majority had noticed symptoms for several months, and in others they had been in evidence for many years. Eleven patients had had their symptoms for less than one year, and 11 for more than one year.

In this group early involvement showed a definite predilection for the lymph nodes of the neck, 10 patients having had the first sign in this area. Some of these patients never showed any symptoms in any other location. Six patients did not notice any particular localization when they observed changes and were found to have generalized lymphadenopathy when first seen at the clinic. In 2 patients the initial lymphadenopathy was in the abdomen, in one in the supraclavicular fossa, in 2 in the axillary lymph nodes, and in one in the groin.

There were only 2 patients who never showed any symptoms beyond the original localization. Both had lymphadenopathy in the neck area; both were treated with large amounts of radiation and remained well for almost six years. In the remaining 20 patients symptoms developed in other areas beyond the original ones, or symptoms were widespread from the onset of the disease.

In the cases of 15 patients with giant follicular lymphadenopathy, the diagnosis was never changed, although it must be pointed out that in 9 of these the observation period is less than three years, and final judgment has to be withheld. Three patients eventually had leukemia, and all of them succumbed to the disease. In one patient a polymorphous-cell sarcoma developed, and one died from leukosarcomatosis. In 2 patients Hodgkin's disease occurred, and one died of intestinal obstruction, possibly in connection with his original disease.

Of the 9 patients who remained alive from 3 to 9 years after first being seen at this clinic, 8 received large amounts of radiation therapy. It is believed that the radiation therapy is responsible for their well-being. One patient had to interrupt her treatment frequently due to general malaise and low blood counts. Blood transfusions were necessary, as well as hospitalization on several occasions.

In other patients who have been under observation for a shorter period, small amounts of radiation which had been given originally had been sufficient to decrease the size of the lymph nodes and even to cause their disappearance. The lymphadenopathy recurred, however, or spread to other localizations. This is in line with Symmers' and Rubenfeld's observations, that only small amounts of radiation are necessary to make the lymph nodes in giant follicular lymphadenopathy disappear. It is believed at the clinic, also, that these small amounts of radiation will influence the enlarged lymph nodes sufficiently to bring about their disappearance, but that these small doses are not sufficient actually to control the disease. Patients so treated may return with local recurrence or with generalized lymphadenopathy at a subsequent date.

In conclusion, the following statements can be made: giant follicular lymphadenopathy may, in the initial state, produce very little discomfort and so few symptoms that they may be considered insignificant by patients as well as physicians. The correct diagnosis can be made if the pathologist is familiar with the microscopic findings. It is an established fact that the disease, seemingly of benign nature, can develop into a truly malignant condition, such as leukemia, sarcoma, or Hodgkin's disease. The most interesting fact is that any one of these three diseases may follow the original giant follicular lymphadenopathy, and this may be taken as another evidence of the close relationship between these different forms of so-called lymphoblastoma. Furthermore, though the author agrees that small amounts of radiation will be sufficient in most instances to produce the disappearance of the involved lymph nodes, he does not believe that this represents a cure of the disease. There are indications, however, that if giant follicular lymphadenopathy is treated with large amounts of radiation, such as are commonly used in the treatment of malignant lesions, the patients will remain free of symptoms for many years. Since 6 of the 22 patients under observation at the clinic have remained symptom-free for a period of five years and longer, and others who have been followed for a shorter period of time may stay well for a similar time, the author feels justified in not recommending a type of therapy which will control the original signs but in most instances not the disease itself. Judging from experience, it seems to be logical to treat giant follicular lymphadenopathy from the very beginning as a potentially malignant disease, regardless of the fact that the microscopic findings may not warrant that diagnosis. In the author's opinion, the clinician should prevail over the pathologist and insist on intensive therapy which may control the symptoms and prevent the development of Hodgkin's disease, leukemia, or sarcoma. (Radiol., Feb. '48 - E. M. Uhlmann)

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Re Stokes-Adams Syndrome: It has been believed generally that attacks of Stokes-Adams syndrome are due to periods of ventricular asystole occurring in patients with heart block. The Criteria Committee of the New York Heart Association defined this syndrome as "attacks characterized by unconsciousness,

often accompanied by muscular twitchings and even generalized convulsions. These attacks occur in patients with auriculoventricular block when the ventricular diastole is sufficiently prolonged to result in a severe grade of cerebral ischemia. The duration and severity of an attack depend on the length of ventricular diastole. This term is not applied to syncope due to other causes." White described the syndrome as "the association of syncope and convulsions with marked slowing of the heart's action. . . All grades of disturbances of the cerebral circulation may exist with from slight dizziness and faintness with transient ventricular standstill of two or three seconds' duration up to extreme degrees of the Adams-Stokes syndrome with cessation of the heart beat for as long as twenty or thirty seconds."

For many years, however, individual case reports recurring in the medical literature indicated the probability that other cardiac arrhythmias might be responsible for the attack in patients with heart block. In 1941, Parkinson and associates reviewed all reported cases of Stokes-Adams syndrome in which electrocardiographic tracings were obtained during the attack. Their findings indicated that only 55 percent of attacks were associated with ventricular asystole, and, on the basis of their study, Parkinson defined Stokes-Adams disease as the "name applicable to patients with heart block who suffer from recurrent attacks of loss of consciousness due to ventricular standstill, ventricular tachycardia, ventricular fibrillation, or a combination of these."

In a patient whose case the author reports in this article, the cerebral anemia precipitating recurrent syncope and convulsions was due not only to ventricular asystole, but also to rapid ventricular tachycardia, ventricular fibrillation, and to different combinations of these arrhythmias. It is emphasized that the activity of the heart in this patient, as shown by electrocardiographic tracings during syncope and convulsions, is not unusual, for the same types of heart action occurred in half of the reported cases of Stokes-Adams syndrome in which electrocardiographic tracings were made during the attack. (Am. Heart J., Feb. '48 - S. Schnur)

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Rutin Therapy for Increased Capillary Fragility and Retinopathy Associated with Diabetes Mellitus: Rutin, as used for the treatment of hemorrhagic states manifested by increased capillary fragility, is a flavonal glucoside isolated from the early blossoming leaves of the buckwheat plant.

Several clinical reports have appeared concerning successful therapeutic results when the drug was used in daily doses of from 60 to 180 mg., and no toxic effects have been reported with the purified drug, regardless of the dosage. Griffith and his co-workers found an increased capillary fragility among hypertensive patients by means of the positive pressure test of Göthlin. They reported that with rutin therapy the fragility became normal in 75 percent of these patients. Shanno has found rutin to be of definite value in preventing the increased capillary fragility associated with thiocyanate therapy for hypertension.

Kushlan has reported the successful use of rutin in arresting hemorrhage in a case of hereditary telangiectasia, and Lindauer, in cases of idiopathic pulmonary hemorrhage. Good results in the treatment of increased capillary fragility in hypertensive patients were also reported by Zfass who found that larger doses were needed in some patients in order to obtain the desired results. Recently, however, McManus and Landrigan claimed to have found no effect of rutin on the increased capillary fragility of 10 patients after 1 month of therapy.

It should be pointed out that in most of these studies the effects of rutin on increased capillary fragility have been observed in only a relatively few diseases. There are many observations concerning the association of increased capillary fragility with various diseases unrelated to thrombocytopenia; these date back many years to Rumpel's observations of increased capillary fragility in scarlet fever in 1909, and Leede's confirmation 2 years later. It has been observed in scurvy, allergy in children, numerous skin diseases, tuberculosis in children, various toxic states, hypertension, rheumatic fever, diabetes mellitus, rheumatoid arthritis, and newborn infants.

It is not surprising, then, that different pathologic mechanisms are found in different patients with increased capillary fragility. In a recent review, Peck and Copley have classified these as due to: (a) rupture of a blood-vessel, (b) perforation of a blood vessel (corrosive or ulcerative), and (c) diapedesis through the unruptured, nonperforated wall of a blood vessel. There is also evidence that various other types of disturbances may be involved in the mechanism of capillary fragility. Increased hyaluronidase activity may liquefy pericapillary supporting tissue which is known to contain hyaluronic acid. Damage to endothelial tissue may prevent this tissue from secreting an interendothelial cement substance which has been found to act as a protective coating for the endothelium facing the lumen. Finally, changes in the elastic tissue around the capillaries may eliminate a cushioning effect that such elastic tissues are known to have and thus facilitate rupture when pressure is applied. Because of the several mechanisms responsible for increased capillary fragility, Peck warns that "the finding that capillary fragility is counteracted by any one treatment must be qualified by the specific conditions under which the subject happens to be during such treatment." Also a successful treatment for capillary fragility occurring in one disease state may have no effect in another.

Wright suggests that the results of any test must not be over-interpreted and that a positive test gives no indication concerning the etiology of the increased fragility. To complicate the general problem, because the various tests, particularly the negative and positive pressure tests, cannot necessarily be correlated, care must be observed in comparing the results of different investigators. Furthermore, it should be noted that results of positive pressure tests may vary in the 2 arms of the same individual at the same time.

Using various tests, many workers have found a greater incidence of increased capillary fragility in diabetics than in nondiabetics.

A close association has been reported between the increased skin capillary fragility (as found through the use of various tests) in diabetic patients and diabetic retinopathy. Thus, Mallery found that in the 30 diabetic patients with positive skin tests, 24 also had retinitis. In a series of 38 patients with diabetic retinitis the same author found 63 percent to have low capillary resistance. Of 41 diabetic patients found by Joslin to have increased Göthlin indices, 26 had retinitis, 12 were hypertensive without retinitis, and only 3 were without hypertension or retinitis.

In this study an attempt was made to determine the effects of rutin on the capillary fragility and retinopathy of diabetic patients and to ascertain whether any improvement in one was accompanied by changes in the other. Twelve diabetic patients with diabetic retinal hemorrhages and with markedly increased capillary fragility were studied. The former complication had been discovered and charted by the members of the eye staff of the hospital. The patients were saturated with ascorbic acid, 100 mg. t.i.d., for one month prior to treatment. They were then given rutin, 20 mg. t.i.d., daily for 2 months; the dose was increased to 40 mg. t.i.d. for another month. Five patients were given ascorbic acid, 100 mg. t.i.d., with the rutin during the entire period of study.

Capillary permeability was studied by the fluorescein method of Lange in 9 of the patients. All 9 tested had normal capillary permeability as determined by this method before treatment was instituted. For this reason additional fluorescein studies were discontinued, and capillary fragility was determined by the positive pressure test as modified by Wright and Lilienfeld. The blood pressure cuff was applied to the upper arm for 15 minutes at a pressure midway between systolic and diastolic pressures. From 2 to 4 minutes after the cuff was released, the number of petechiae were counted in a 2.5 cm. circle on the flexor surface of the forearm 4 cm. below the crease of the elbow.

During the 3 months of the study, the patients were maintained on adequate diets. All except one received insulin, the range of the dosage varying from 10 to 55 units.

Marked improvement in skin capillary fragility was found in 3 and moderate improvement in one. In 2 of these the changes accompanied a reduction of hypertension.

Only 5 fundi (4 patients) of 23 improved; in 2 of the 5, the retinal hemorrhages cleared up completely. This improvement cannot be directly attributed to rutin. Diabetic retinitis progressed rapidly in one patient while under treatment.

In 2 patients, the retinal lesions improved without a change in the increased skin capillary fragility and in a similar number, the skin capillary resistance increased without retinal improvement. (Am. J. M. Sc., Feb. '48 - L. M. Levitt et al.)

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Announcement from The American Board of Orthopedic Surgery, Inc.: At its annual meeting in Chicago, 24 January 1948, the American Board of Orthopedic Surgery passed a resolution to increase the examination fee for Part II of the examination of the Board from $35.00 to $50.00. This increase is now in effect, and candidates applying for Part II to be given in January 1949 are notified of this change. There is no change in the fee of $15.00 which is submitted with the application.

The deadline for receipt of applications for Part II of the examination has been established as 15 August 1948.

Applications for Part I of the examination to be given in the spring of 1949 must be received by the Secretary NOT LATER than 1 January 1949. There is no change in fees in connection with Part I of the examination. (Professional Div., BuMed)

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Examination for Appointment in the Medical Corps of the U. S. Navy: Examinations for appointment in the grade of lieutenant (junior grade) in the Medical Corps of the Navy will be held at Naval hospitals in the continental United States during the period from 3 to 7 May 1948.

Graduates of approved medical schools in the United States or Canada who have completed intern training in accredited hospitals or who will complete such training within four months from the date of the examination, who will be less than 32 years of age at the time of appointment, and who are otherwise qualified, are eligible to take the examination.

Successful candidates who are tendered and accept an appointment will receive orders assigning them to duty in a Naval medical facility for active Naval service.

Additional compensation at the rate of $100 a month has been provided by Public Law 365 of the Eightieth Congress, approved 5 August 1947, for each month of active service performed by officers of the Medical Corps of the Navy. This is in addition to any pay, allowances or emoluments that Medical Corps officers are otherwise entitled to receive, and by the provisions of the law, the amount paid to any one officer under this authority is limited to a total of $36,000 computed on the basis of $1,200 yearly over a period of 30 years' active service.

Detailed information concerning the form and procedure of application may be obtained from Naval Officer Procurement offices or from the Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C. (Professional Div., BuMed)

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New Dental Technician Ratings: Under authority of BuPers Circular Letter 189-47 pharmacist mates and hospital apprentices who are designated as dental technicians (DGT, DPT, DP, and DRM) will be given ratings in occupational "Group XI Dental" of the new rating structure. These changes will be made automatically by commanding officers as of 2 April 1948.

The following ratings are included in "Group XI Dental":

Chief Dental Technician	DTC	Pay grade	1
Chief Dental Technician (Acting)	DTCA	" "	1A
Dental Technician first class	DT1	" "	2
Dental Technician second class	DT2	" "	3
Dental Technician third class	DT3	" "	4
Dentalman	DN	" "	5
Dental Apprentice	DA	" "	6
Seaman Recruit	SR	" "	7

The specialty mark for dental technicians is a caduceus on which the letter "D" is superimposed. An illustration of this new badge may be found on page 33 of the March issue of All Hands magazine. (Dental Div., BuMed)

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Re Additional Compensation for Navy Interns: Alnav 190-47 of 2 September instructed the disbursing officers concerned not to credit the accounts of Naval interns with the extra compensation of $100 per month which was authorized for certain officers by Public Law 365 - 80th Congress, pending a determination by the Comptroller General of the United States of whether they were or were not eligible for the extra monetary benefit.

By a decision of the Assistant Comptroller General of the United States numbered B 70902 and dated 1 March 1948, Naval interns are not entitled to the additional pay at the rate of $100 per month.

This decision affects about 75 interns, about 50 of whom were originally appointed before 7 August 1947 and hence came in as acting assistant surgeons with the rank of lieutenant (j.g.), and about 25 who came in under Public Law 381 - 80th Congress, approved 7 August 1947, as lieutenants (j.g.) appointed for temporary service (internship). Those appointed in the future as lieutenants (j.g.) for temporary service (internship) will likewise be affected by this ruling.

In a 6-page letter transmitting his decision to the Secretary of the Navy, the Assistant Comptroller General cited the existing laws and set forth the reasoning upon which his decision had been reached. (Professional Div., BuMed)

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Circular Letter 48-25 8 March 1948

To: All Medical Supply Depots

Subj: Authorization for Periodic Retirement of Records Maintained by Medical Supply Activities.

Ref: (a) Par. 12B11, Manual of the Medical Department

Encl: 1. (HW) Medical Supply Depot Records Schedule

1. Congressional authorization (House Report No. 1378, 80th Congress, 2nd Session, dated 17 Feb 1948) has been obtained for the continuing disposal of items in the enclosed records schedule, when they have reached the ages specified.

2. Records described in items marked "To be retained," and records which have not reached their disposal age, shall be transferred to the Naval Records Management Center, Garden City, Long Island, New York, when they become inactive or upon disestablishment of an activity.

3. District Records Management Officers located at District Staff Headquarters are available for assistance in records administration problems.

4. This records schedule will be included in the next Manual page change as paragraph 12B11.5A of reference.

--BuMed. C. A. Swanson

Note: Enclosure not reproduced in News Letter.

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Circular Letter 48-26 9 March 1948

To: All Ships

Subj: Dental Property Afloat - Instructions Regarding Financial Responsibility and Accountability of

Refs: (a) Pars 3072, 3086, 3100 and 3101, Chapter 20, Finance and Property, Manual of the Medical Department as modified by BuMed CirLtr 46-79 of 13 May 1947
(b) ALNAV 343 dated 27 June 1946
(c) SecNav ltr Op21D-jc Serial 3369P24 A18/P5-1 dated 27 June 1946
(d) BuMed CirLtr 47-68 dated 29 May 1947
(e) BuMed CirLtr 47-33 dated 17 March 1947 (ND Bulletin 31 March 1947)

(f) BuMed CirLtr 47-109 dated 19 August 1947 (ND Bulletin 31 August 1947)
(g) CNO ltr Op21D-jc over Serial 2988P21 dated 31 July 1947
(h) Par 3033, Manual of the Medical Department

This letter from the Chief of BuMed contains instructions to clarify and implement references (b), (c), and (g) in regard to financial responsibility for procurement and accountability of dental property afloat and to assist BuMed in determining the total cost of dental care in the Navy.

Note: See Navy Department Bulletin of 15 March 1948 for full copy of this letter.

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Circular Letter 48-27 10 March 1948

To: All Naval Hospitals and Naval Medical Supply Depots

Subj: Occupational Therapy Equipment and Supplies (Class 11), Army-Navy Catalog of Medical Materiel; Instructions Concerning Procurement of

Ref: (a) BuMed Circular Ltr No. 47-40 dated 28 March 1947.
(b) BuMed Circular Ltr No. 47-33 dated 17 March 1947.

1. The method of obtaining occupational therapy materials has been modified. All requisitions submitted prior to 1 January 1948 are being processed as outlined in reference (a). All requisitions submitted subsequent to 1 January 1948 are being accomplished in accordance with reference (b). Accordingly, as soon as all material that is to be furnished on requisitions dated prior to 1 January 1948 has been received, reference (a) will no longer be effective.

2. Henceforth, all Class 11 materials will be obtained by submitting quarterly requisitions, NavMed 4, in triplicate, using JAN stock numbers only, direct to BuMed (MatDiv) Brooklyn. Issue will be made by Naval Medical Supply Depot, Brooklyn, in the same manner as outlined in reference (b).

--BuMed. C. A. Swanson

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Circular Letter 48-28 11 March 1948

To: Naval and Marine Corps Stations (Selected List)
Attn: Senior Medical Officers

Subj: Implementation by BuMed of Navy Department Policy Covering Provision of Eye Protection and Eye Correction for Naval Shore Establishment Employees.

Refs: (a) Contract N7sx429 with American Optical Co., Southbridge, Mass., for vision testing.
(b) Contract N7sx431 with Bausch and Lomb Optical Co., Rochester, N. Y., for vision testing.
(c) Contract N7sx430, with American Optical Co., for furnishing corrective-protective spectacles.
(d) Contract N7sx432, with Bausch and Lomb Optical Co., for furnishing corrective-protective spectacles.
(e) Navy Standard Prescription Form-NAVEXOS 2704.
(f) Purchase Invoice; eye-care Services - Form S&A 414.
(g) U. S. Navy Manual of Eye Correction and Eye Protection - (Advance Copy).
(h) UnderSecNav ltr OIR-550:bm 707 to Chiefs of Offices and Bureaus dtd 22 Sept 1947 (CPL&D-47-107) (Reproduced in Encl. 1).

Encl: 1. (HW) Copy of Ref. (g).

1. The Secretary of the Navy, in a letter dated 22 September 1947, reproduced in full in Ref. (g), Encl. 1, established a firm policy for the Navy relative to the mandatory use of protective eyewear in eye hazardous trades and areas. The implementation of this policy at shore activities is the responsibility of the bureau under whose management control the activity is placed. This letter furnishes information by Encl. 1 regarding the procedures which BuMed activities will carry out to assure compliance with the Secretary's letter.

2. Representatives of certain BuMed activities attended the Regional Safety Conferences at Alameda in December, 1947, at Jacksonville in January, 1948, and the Washington Conference on 3, 4, and 5 February, 1948, and had this eye-protection program fully explained for their guidance.

3. Copies of references (c) and (d) and either reference (a) or (b) have been forwarded by the Bureau of Supplies and Accounts. These references allude to the contracts with two optical companies with which the Bureau of Supplies and Accounts has recently negotiated Navy-wide contracts for furnishing the necessary services and supplies for corrective-protective eyewear.

4. Contracts for checking visual efficiency, references (a) and (b), provide for screening employees to locate those needing corrective lenses. Either contract, references (c) or (d), for materials may be used by the Supply Officer to procure the corrective-protective eyewear found to be needed for employees engaged in designated eye-hazardous work. Any employee with one eye should be considered as engaged in such work. References (e) and (f) will take care of an eye examination and provide a proper occupational eyewear prescription for such employees as are located in the screening process.

5. On page number 1 of schedule sheet, references (a) and (b), is shown the "key" activity of naval establishments indicated by the letter "a." These key activities have been designated and contracts so negotiated to establish a

central activity for initiation of the program and will aid those stations within a general geographical area, naval base, or district. All medical department activities are satellites of these key stations, and the officer representative of each BuMed activity should contact the Industrial Relations officer and/or safety officer of these "key" stations for arrangements for these services and for visual testing of civilian employees.

6. The particular designation of certain hospitals may not appear in either of the formal contracts, references (a) or (b). This is because of the small number of civilian employees involved. Those activities will be included within the contract of the nearest key station shown in these references. There will be no cost for "screening" the employees of these activities, but the cost of furnishing eyeglasses will be borne by the appropriation chargeable for the maintenance and operation of the station. This program applies equally as much to these stations as those enumerated, and the key stations will include all personnel employed at BuMed installations within the scope or the terms of the key station contract.

7. To clear up any question relative to the participation of Medical Corps Officers in the subject program, the reference to such officers in paragraph 3(e) of Ref. (h) is interpreted to place the function of writing prescriptions for glasses upon such officers only when eye specialists are aboard and are available for the work.

8. Reference (e) is now being printed and it is expected will be available at the District Publications and Printing Offices before the last of the month of February, 1948. Reference (f) has been published separately as C.P.L. & D - 48-5, dated 16 January 1948. Since these references are not necessarily required for implementation of the vision testing system, the use of references (a) or (b) need not be delayed until that time.

--BuMed. C. A. Swanson

Note: Enclosure not reprinted in News Letter.

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Circular Letter 48-29 12 March 1948

To: All Activities under the Management Control of the Bureau of Medicine and Surgery

Subj: Personnel Action, Submission of

Ref: (a) NCPI 135.5-3 (8), as amended.

1. The submission of copies of NAVEXOS-1200, Official Personnel Action, and/or Standard Form 50 (CSC), Notification of Personnel Action to the Bureau of Medicine and Surgery is no longer required.

2. Accordingly, the Office of Industrial Relations, Navy Department, has been requested to amend reference (a).

3. The type of information previously secured from copies of Personnel Actions by the Bureau will in the future be requested on a special case basis as the need arises.

--BuMed. C. A. Swanson

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Circular Letter 48-30 15 March 1948

To: MedOfsCom, Naval Hospitals

Subj: Possession or Sale of Alcoholic Beverages in Naval Hospitals and on Hospital Reservations

Refs: (a) Article 118, U. S. Navy Regulations 1920.
(b) General Order No. 59 dtd 13 May 1935.
(c) SecNav Ltr, Op-21D-jc, Serial 7078P21 dtd 9 Dec 1946
(d) SecNav Ltr, Op-21D-jc, Serial 3346P21 dtd 13 Jul 1946.
(e) AlNav 208-44, as modified by AlNav 22-48.
(f) BuMed CircLtr No. 45-166 dtd 30 Jun 1945.

This letter from the Chief of BuMed (1) prohibits the possession or use of alcoholic liquors (including beer and ale having an alcoholic content of 3.2 percent by weight or less) for beverage purposes or for sale, in naval hospitals or on naval hospital reservations, (2) lists certain exceptions to (1), and (3) directs the medical officer in command to issue certain necessary detailed control instructions incident to (1) and (2). Reference (f) is cancelled.

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Circular Letter 48-31 17 March 1948

To: All Holders of the Manual of the Medical Department

Subj: Advance Change 3-4, MMD

Encl: 1. (HW) Subject Change

1. The enclosed Advance Change 3-4 is effective immediately. It shall be recorded on the "Record of Changes" page in the Manual. The individual paragraph changes are to be inserted in their proper places in the Manual text. At a later date, these changes will be incorporated in printed page change 3.

--BuMed. C. A. Swanson

Note: Enclosure not reprinted in News Letter.